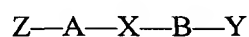


# CLAIMS

1. A hydrotreating catalyst comprising at least one element of groups VIB and group VIII of the periodic table and optionally at least one of phosphorus and silicon deposited on a porous substrate, and as an additive an organic compound containing at least one nitrogen atom, said organic compound being of the formula:



in which:

- X = -CH<sub>2</sub>-, -NH-, -NR-, -O-, with R = -H, alkyl or alkenyl;
  - Z = -CH<sub>3</sub>, -OCH<sub>3</sub>, -NH<sub>2</sub>, -NR<sub>1</sub>R<sub>2</sub>, -Si(O-CH<sub>3</sub>)<sub>3</sub>, -OH with R<sub>1</sub> and R<sub>2</sub> = -H, alkyl or alkenyl;
  - Y = -CH<sub>3</sub>, -OCH<sub>3</sub>, -NH<sub>2</sub>, -NR<sub>3</sub>R<sub>4</sub>, -Si(O-CH<sub>3</sub>)<sub>3</sub>, -OH with R<sub>3</sub> and R<sub>4</sub> = -H, alkyl or alkenyl;
  - A = -O-, -NH-, -(CH<sub>2</sub>)<sub>t</sub>- with t = 1 to 11, -C<sub>n</sub>H<sub>2n-2</sub> with n = 1 to 11, or else
- and
- B = -O-, -NH-, -(CH<sub>2</sub>)<sub>t</sub>- with t = 1 to 11, -C<sub>n</sub>H<sub>2n-2</sub> with n = 1 to 11, or else

2. Catalyst according to claim 1, wherein said organic compound is selected from among the compounds that contain at least one primary, secondary, and/or tertiary amine group, amino alcohols and amino-alkoxy-silanes.

3. Catalyst according to claim 2, wherein said compound that contains at least one primary, secondary and/or tertiary amine group is selected from among hexamethylenediamine, monoethanolamine, diethanolamine, triethanolamine and N,N-dimethyl-N'-ethylethylenediamine.

4. Catalyst according to claim 2, wherein said amino alcohol is selected from among 2(2-amino ethyl amino)ethanol, 2(2-amino ethoxy)ethanol, 2-amino-1-butanol, 4-amino-1-butanol, 2,2-diethoxyethylamine, 4,4-diethoxybutylamine, 6-amino-1-hexanol, 2-amino-1,3-propanediol, 3-amino-1,2-propanediol and 3-amino-1-propanol.

5. Catalyst according to claim 2, wherein said amino-alkoxy-silane is selected from among (3-glycidoxypropyl)trimethoxy silane, 3-(2-aminoethylamino)propyl-trimethoxysilane and (3-aminopropyl)trimethoxysilane.

6. Catalyst according to one of claims 1 to 5, wherein the amount of said organic compound in the catalyst is 0.05 to 2.5 mol per mol of metal (metals) of group VIB and/or of group VIII deposited on the substrate.

7. Catalyst according to claim 6, wherein the amount of said organic compound in the catalyst is 0.1 to 1 mol per mol of metal (metals) of group VIB and/or group VIII deposited on the substrate.

8. Catalyst according to one of claims 1 to 7, wherein said porous substrate comprises at least 40% by weight of alumina.

9. Catalyst according to claim 8, wherein said porous substrate essentially consists of alumina or silica-alumina.

10. Catalyst that is obtained from a catalyst according to one of claims 1 to 9 by calcination.

11. Catalyst that is obtained from a catalyst according to one of claims 1 to 10 by sulfurization.

12. Process for preparation of a catalyst according to one of claims 1 to 11, wherein it comprises the impregnation of a porous substrate by the metal or metals of group VIB and/or group VIII and the deposit on said substrate of said organic compound.

13. Process according to claim 12, wherein it comprises:

- An impregnation stage of the porous substrate by the metal or metals of group VIB and/or group VIII;
- A drying stage;
- A stage for depositing said organic compound.

14. Process according to claim 13, wherein the drying stage is followed by a calcination stage.

15. Process according to claim 12, wherein it comprises:

- A simultaneous impregnation stage of the metal or metals of group VIB and/or of group VIII and of said organic compound; and
- A drying stage.

16. Process according to claim 15, wherein the drying stage is followed by a calcination stage.

17. Process according to claim 12, wherein it comprises:

- A stage for depositing said organic compound;
- A drying stage; and
- A stage of impregnation of the porous substrate by the metal or metals of group VIB and/or group VIII.

18. Process according to one of claims 12 to 17, wherein it also comprises a sulfurization stage.

19. Process according to claim 18, wherein the organic compound is present in the sulfurization feedstock and is deposited during the sulfurization stage.

20. Use of a catalyst according to one of claims 1 to 11 or prepared according to one of claims 12 to 19 in a process of hydrodesulfurization, hydrodenitrification, hydrodemetallization, hydrogenation or hydroconversion of a petroleum fraction.